052-0026

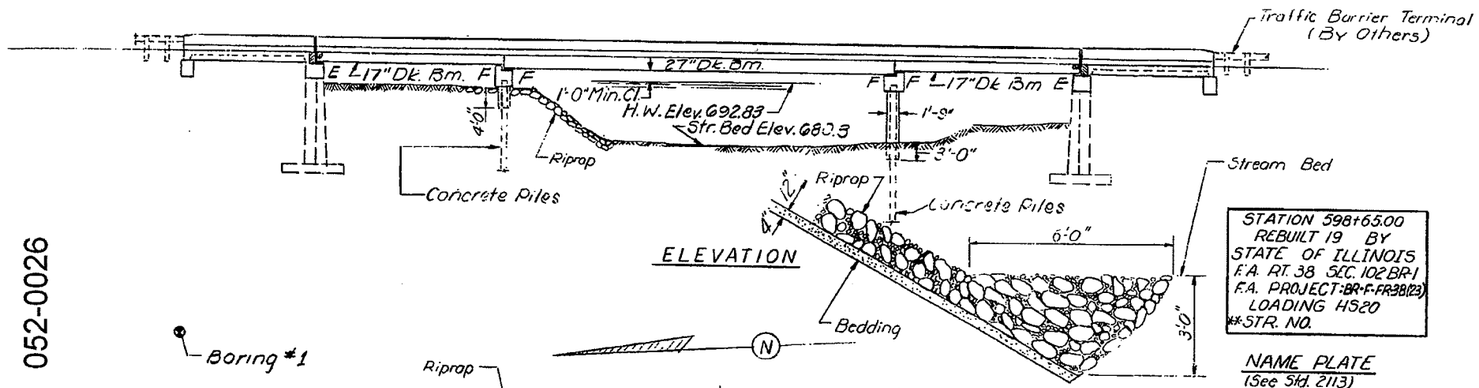
B.M. Chiseled square on S.W. wingwall of bridge 15' Rt. Sta. 602+56 Elev. 695.49
Existing Structure #052-0026 Built as S.B.I. Rt. 20, Sec. 102 B&C, at Sta. 598+65 in the year 1927. The existing 120'-0" long by 23'-2" wide steel truss shall be removed and the existing R.C. closed Abuts. rebuilt and two new concrete enclosed pile bent piers built to accommodate a new P.P.C. Deck Beam Superstructure. Traffic shall be detoured.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A. 38	102 BR-1	LEE	61	15

PER. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT-

SHEET NO. 13 SHEETS



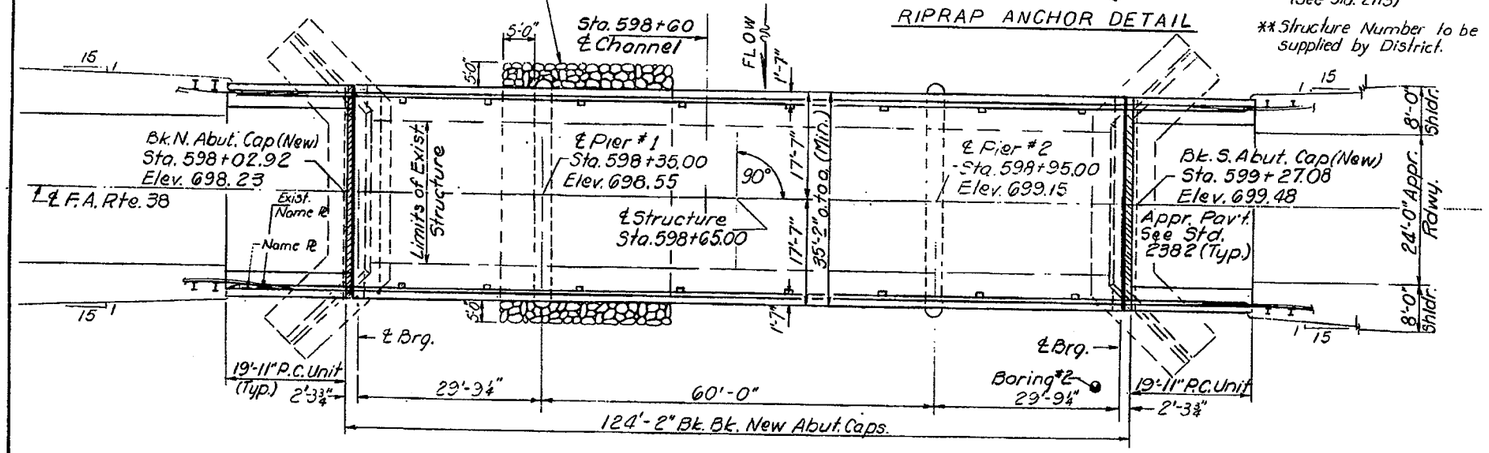
ELEVATION

RIPRAP ANCHOR DETAIL

STATION 598+65.00
REBUILT 19 BY
STATE OF ILLINOIS
F.A. RT. 38 SEC. 102 BR-1
F.A. PROJECT-BR-F-FR38(123)
LOADING H520
**STR. NO.

NAME PLATE
(See Std. 2113)

** Structure Number to be supplied by District.



PLAN

+0.99% Grade
Sta. Increase

Sta. 597+59
Elev. 697.80

PROPOSED PROFILE GRADE

DESIGNED	
CHECKED	M. Ryan
DRAWN	A. Doty
CHECKED	MR

February 24, 1981
EXAMINED
PASSED
APPROVED

WATERWAY INFORMATION

Drainage Area 235 Sq. Mi. Low Grade Elev. @ Sta.

Flood	Freq. Yrs.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head Ft Exist.	Head Ft Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	6400 3800	990	990	692.83	0	0	692.83	692.83
Base	100	7850 3700*	990	990	693.3	0	0	693.3	693.3
Max. Calc.	500	9135 4000*	990	990	693.3+	0	0	693.3+	693.3+

*Estimated Discharges
Note: Proposed Opening over the Green River is one opening of a total of (3) located in the Green River floodplain. A total opening 1328 Sq. Ft is provided below design Highwater.

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinf.)
fs = 20,000 p.s.i. (Struct.)

PRECAST UNITS
f'c = 4,500 p.s.i.
fc = 1,800 p.s.i.
fs = 20,000 p.s.i.

PRECAST PRESTRESSED UNITS
f'c = 5,000 p.s.i.
f'ci = 4,000 p.s.i.
fs = 270,000 p.s.i. (½" ϕ Strands)
fsi = 189,000 p.s.i. (½" ϕ Strands)

Design Specifications 1977 AASHTO
1978, 1979 & 1980 Interim Specs. as applicable
Allow 25 #/sq. ft. for future Wearing Surface
LOADING HS20-44 (New Structure)

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60.

See Proposal for Boring Data.

All structural steel shall be shop painted with two coats of basic lead silico chromate paint.

Expansion guards which are not cast in the precast unit shall be fabricated and erected in accordance with Article 503.07 of the Standard Specifications and are included in quantity of structural steel.

The contractor shall drive one concrete test pile in a permanent location at Pier 1 as directed by the Engineer before ordering the remainder of piles.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation or a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 4".

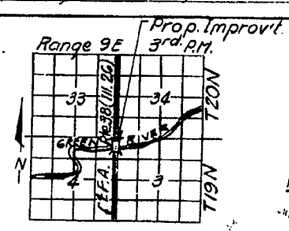
Limits of Waterproofing Membrane System shall be from toe to toe of parapets and end to end of deck beams.

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

Shoulder transition to wingwall shall be shaped with broken concrete. Cost incidental.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Bituminous Concrete Surface Course, Class I	Tons	50		50
Removal of Existing Superstructures	Each	1		1
Concrete Removal	Cu. Yd.		18	18
Structure Excavation	Cu. Yd.		83	83
Stone Riprap	Sq. Yd.		140	140
Protective Coat	Sq. Yd.	130		130
Class X Concrete	Cu. Yd.	42.4	110.9	153.3
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2122		2122
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	2097		2097
Structural Steel	Pound	4620		4620
Reinforcement Bars	Pound	4200	9150	13,350
Reinforcement Bars (Epoxy Coated)	Pound	1480		1480
Concrete Piles	Lin. Ft.		56.3	56.3
Test Piles Concrete	Each			1
Name Plates	Each	1		1
Preformed Joint Seal 2½"	Lin. Ft.	70		70
Portland Cement Mortar Fairing Course	Lin. Ft.	108.5		108.5
Waterproofing Membrane System	Sq. Yd.	429		429



LOCATION PLAN

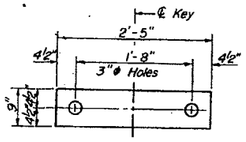
GENERAL PLAN
F.A. RTE. 38 OVER GREEN RIVER
F.A. RTE. 38 (ILL. RT. 26) SEC. 102 BR-1
LEE COUNTY
STA. 598+65.00

052-0026

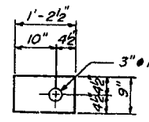
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
38	102 BR-1	LEE	61	17

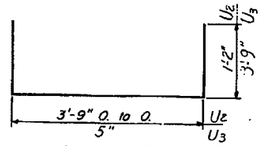
SHEET NO. 3 OF SHEETS



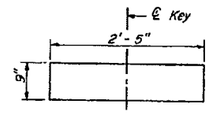
FABRIC BEARING PAD
(Interior)
(48" Beams)



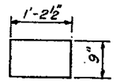
FABRIC BEARING PAD
(Exterior)
(48" Beams)



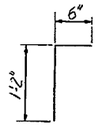
U2 & U3 BARS



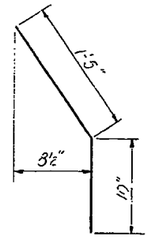
GRAPHITED ASBESTOS BEARING PAD
(Interior)
(48" Beams)



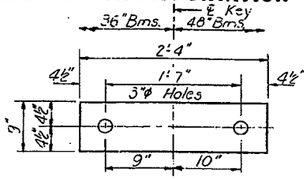
GRAPHITED ASBESTOS BEARING PAD
(Exterior)
(48" Beams)



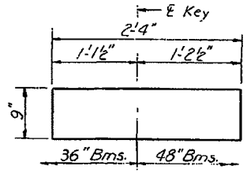
D2 BAR



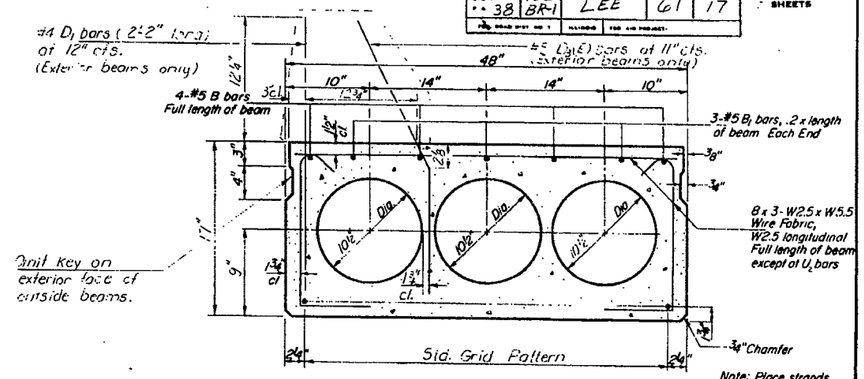
D3(E) BAR



SPECIAL FABRIC BEARING PAD

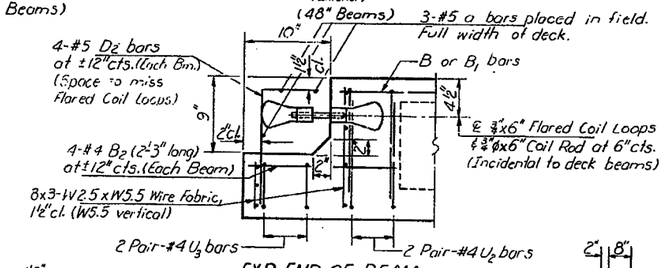


SPECIAL GRAPHITED ASBESTOS BEARING PAD

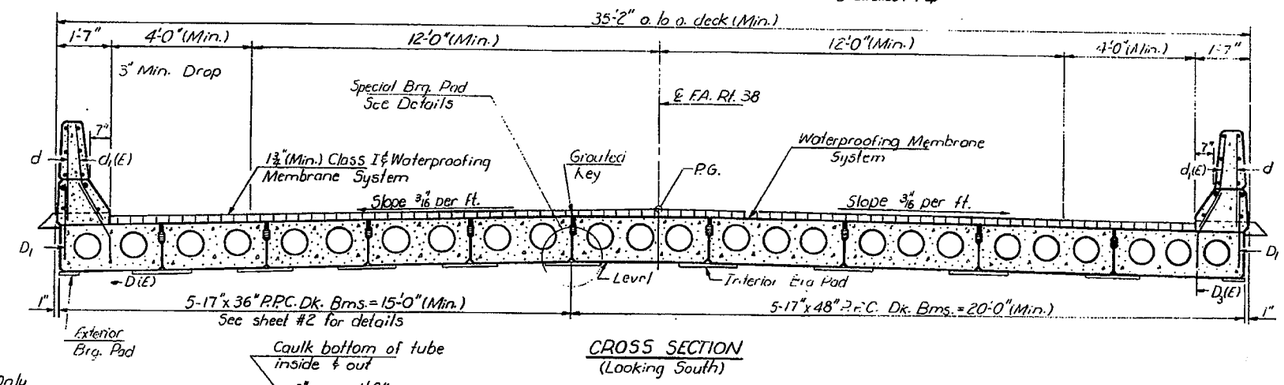


Note: Place strands symmetrically about ℄ of beam. Place to miss dowel rods.

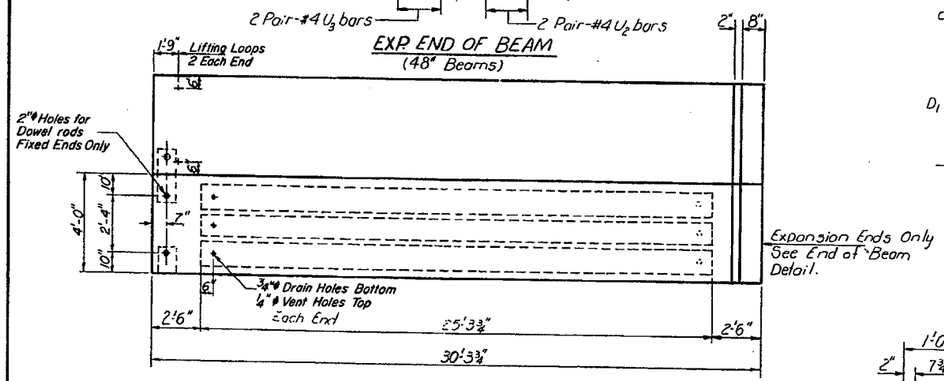
TYPICAL SECTION
6-½"ϕ Strands, Each Strand Stressed to 28,900 Lbs.
8-Strands 1¾"up



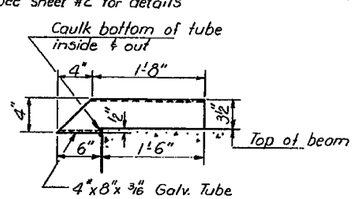
EXP. END OF BEAM
(48" Beams)



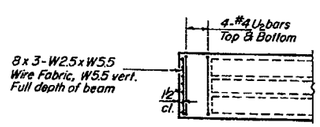
CROSS SECTION
(Looking South)



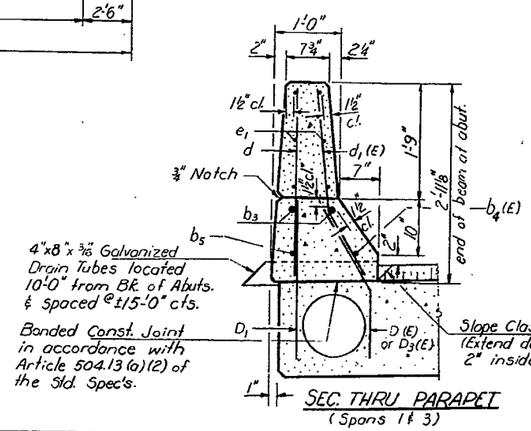
PLAN
(48" Beams)



DRAIN DETAIL
(Cost Incidental)



FIXED END PLAN
(48" Beams)



SEC. THRU PARAPET
(Spans 1 & 3)

NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be ½" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs or 2-6"ϕ-270 ksi strands as shown on sheet #2.

Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Reinforcement bars for expansion pocket and parapets and Class X Concrete are billed on sheet #6.
For Detail of D (E) bar see sheet #2.

BILL OF MATERIAL

	Item	Unit	Total
*	Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	[illegible]

* For 48" Beams.
See sheet #2 for Bill of Material for 36" bms.

SUPERSTRUCTURE
SPANS 1 & 3
F.A. RT. 38 SEC. 102 BR-1
LEE COUNTY
STA. 598+65.00

DESIGNED	[illegible]
CHECKED	M. Ryan
DRAWN	R. Doty
CHECKED	MR

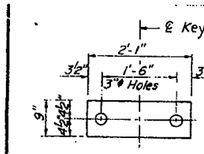
EXAMINED — FEB. 24 1981
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

PD-4-S 6-15-80

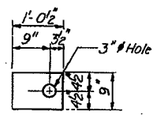
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 38	102 BR-1	LEE	61	18

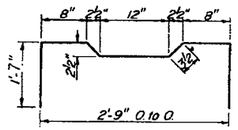
SHEET NO. 4
13 SHEETS



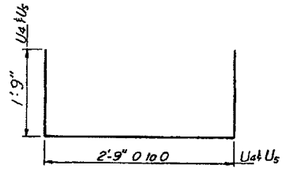
FABRIC BEARING PAD
(Interior)
(36" Beams)



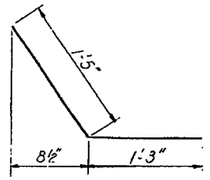
FABRIC BEARING PAD
(Exterior)
(36" Beams)



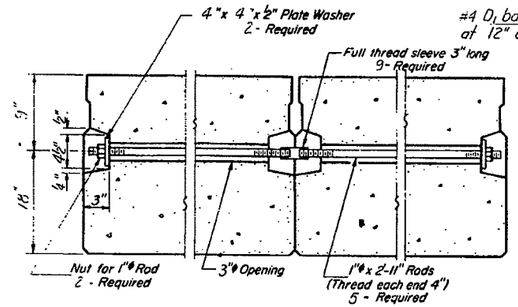
A_1 BAR



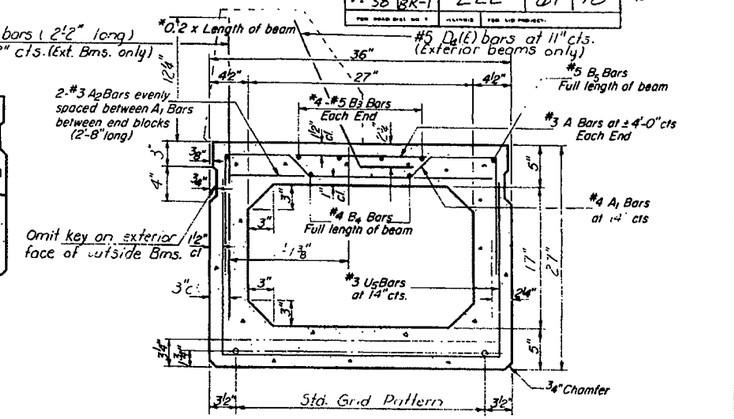
U_4 & U_5 BARS



$D_4(E)$ BAR

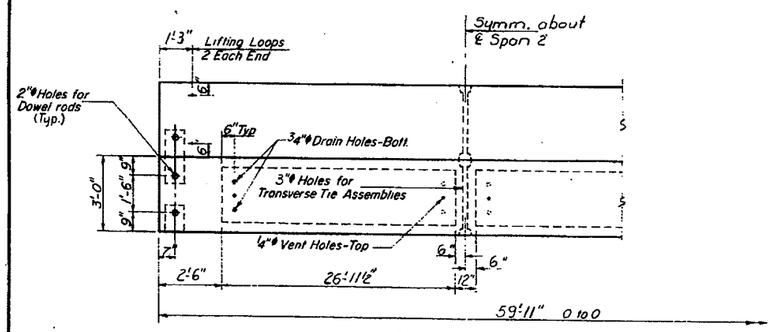


TYPICAL TRANSVERSE TIE ASSEMBLY
(36" Beams)

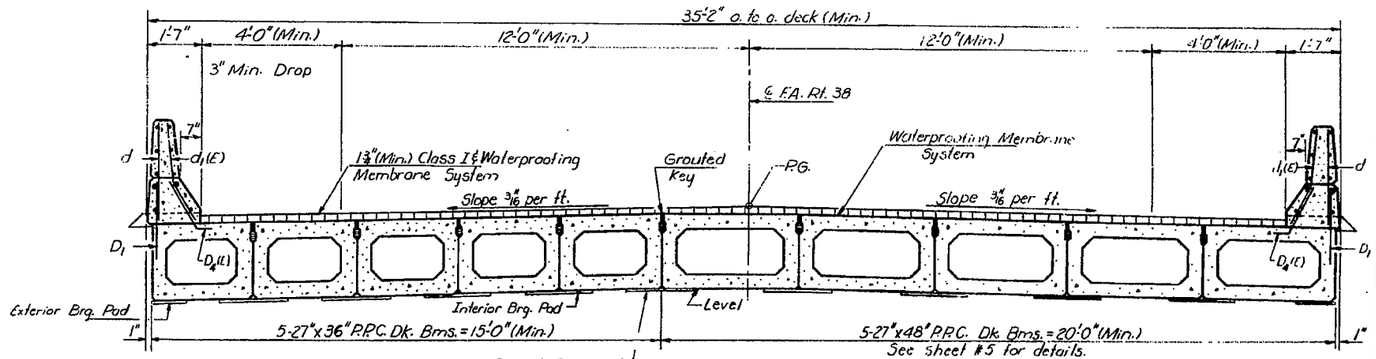


Note: Place strands symmetrically about ℄ beam. Place to miss dowel rods.

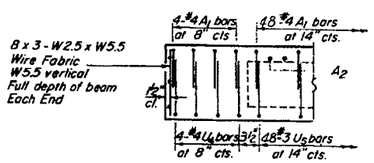
TYPICAL SECTION
13 - ½"ϕ Strands Each Strand Stressed to 28,900 Lbs.
9 - Strands 1¾" up, 4 - Strands 3¼" up.



HALF PLAN
(36" Beams)



CROSS SECTION
(Looking South)



END ELEVATION
(36" Beams)

NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq in.
Lifting loops shall be ½" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs. or 2-½"ϕ-270 ksi strands shown on sht. #2.
The 1"ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60.
For Sec. Thru Parapet see sheet #5.
Parapet reinforcement and Class X Concrete re billed on sheet #8.
For Drain Detail see sheet #3.

BILL OF MATERIAL

Item	Unit	Total
* Precast Prestressed Concrete Deck Beams (27" Depth)	Lin. Ft.	399

* For 36" Beams.
See sheet #5 for Bill of Material - or 48" bms.

DESIGNED	Patricia Renaudin
CHECKED	M. Ryan
DRAWN	R. Doty
CHECKED	MR

EXAMINED — FEB 24 1981
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

PD-5-5 8-1-78

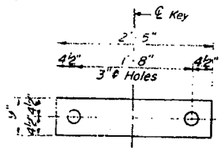
SUPERSTRUCTURE
SPAN 2
F.A. RT. 38 SEC. 102 BR-1
LEE COUNTY
STA. 598+65.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

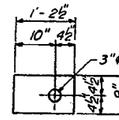
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
38	102 BR-1	LEE	61	19

FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT

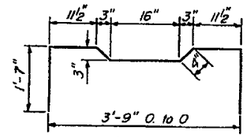
SHEET NO. SHEETS



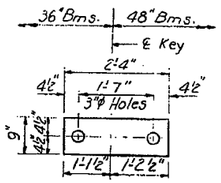
FABRIC BEARING PAD
(Interior)
(48" Beams)



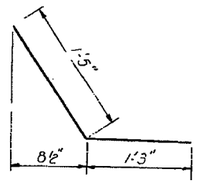
FABRIC BEARING PAD
(Exterior)
(48" Beams)



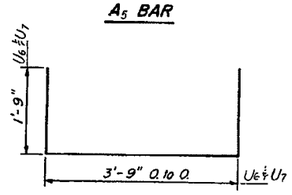
A_5 BAR



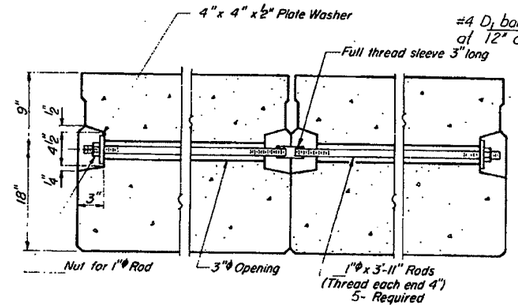
SPECIAL FABRIC BRG. PAD



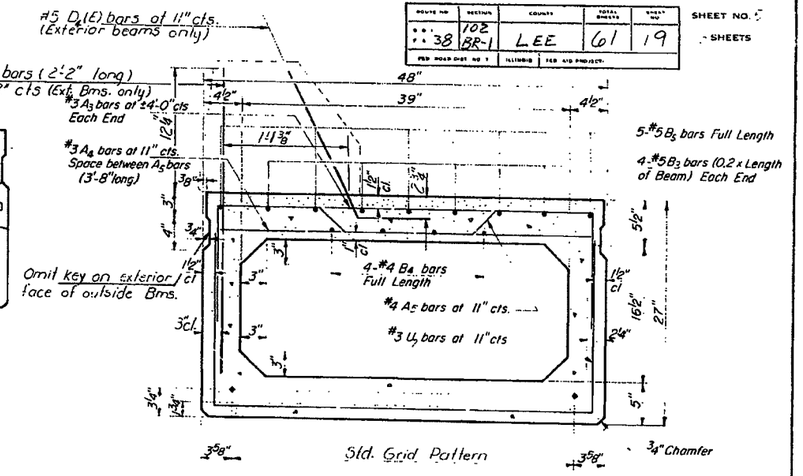
$D_4(E)$ BAR



U_6 & U_7 BARS

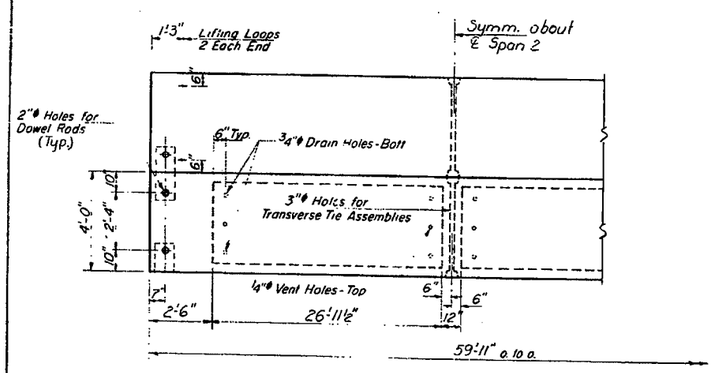


TYPICAL TRANSVERSE TIE ASSEMBLY
(48" Beams)

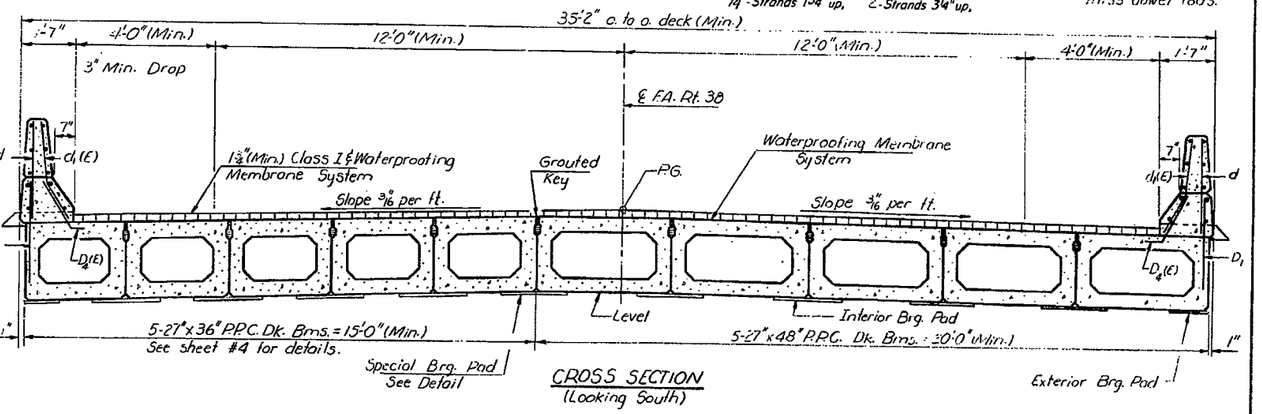


TYPICAL SECTION
16- ½"ϕ Strands Each Strand Stressed to 28,900 Lbs
14 -Strands 1¾" up, 2-Strands 3¼" up,

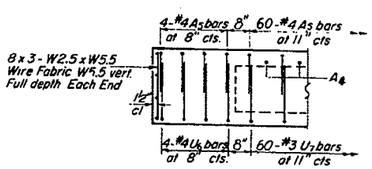
Note:
Place strands symmetrically about ℄ beam. Avoid to miss dowel rods.



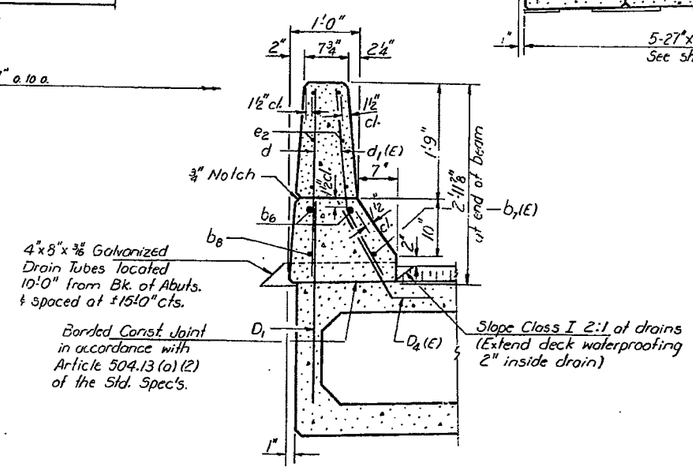
HALF PLAN
(48" Bms.)



CROSS SECTION
(Looking South)



END ELEVATION
(48" Bms.)



SEC. THRU PARAPET
(Span 2)

NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.
The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in
Lifting loops shall be ⅝" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 33,000 lbs. or 2 - ½" ϕ-270 ksi strands as shown on sht. #2.
The 1"ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
Parapet reinforcement and Class X Concrete are billed on sheet #8.
For Drain Detail see sheet #3.

BILL OF MATERIAL

Item	Unit	Total
* Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft	1198

* For 48" Beams.
See sheet #4 for Bill of Material for 36" Bms.

DESIGNED	Trent T. Tarvin
CHECKED	M. Ryan
DRAWN	R. Doty
CHECKED	MR

EXAMINED FEB. 24 1981
PASSED
APPROVED

PD-6-S 6-15-80

SUPERSTRUCTURE
SPAN 2
F.A. RT. 38 SEC. 102 BR-1
LEE COUNTY
STA. 598+65.00